

**From:** [Young, Howard S.](#)  
**To:** [Zhen, Davis](#); [Sheldrake, Sean](#)  
**Cc:** [Scott Coffey](#); [Stuesse, Gregory L.](#)  
**Subject:** RE: Fish Tracking - Post Surgery Holding Times  
**Date:** Wednesday, May 9, 2018 10:50:20 AM

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Davis,

Section 4 – Field Work Tasks and Procedures of the FSP states a minimum post-surgery holding time of 2 hours but the SOP that Ken referenced specifies “approximately 2 hours, but hold times may be longer or short.” We assumed the more conservative minimum 2-hour hold time stated in the procedures when we notified AECOM of the deviation from the FSP. Apparently they are open for interpretation when there are contradictory specifications in the FSPs.

Howard S. Young, LG | CDM Smith

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**From:** Zhen, Davis <[Zhen.Davis@epa.gov](mailto:Zhen.Davis@epa.gov)>

**Sent:** Wednesday, May 09, 2018 8:27 AM

**To:** Coffey, Scott <[CoffeySE@cdmsmith.com](mailto:CoffeySE@cdmsmith.com)>; Young, Howard S. <[younghs@cdmsmith.com](mailto:younghs@cdmsmith.com)>;

Sheldrake, Sean <[sheldrake.sean@epa.gov](mailto:sheldrake.sean@epa.gov)>

**Subject:** Fwd: Fish Tracking - Post Surgery Holding Times

Thanks,

Sent from my iPhone, please excuse typos

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Davis Zhen, Manager

Site Cleanup Unit 2

Office of Environmental Cleanup

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Begin forwarded message:

**From:** "Tyrrell, Ken" <[ken.tyrrell@aecom.com](mailto:ken.tyrrell@aecom.com)>

**Date:** May 9, 2018 at 7:59:51 AM PDT

**To:** "Zhen, Davis" <[Zhen.Davis@epa.gov](mailto:Zhen.Davis@epa.gov)>

**Subject:** Fish Tracking - Post Surgery Holding Times

Davis,

This email follows up on the question of post-surgery smallmouth bass holding time used in the fish tracking study. The assessment of post-surgery fish health and holding times was performed in accordance with the Acoustic Fish Tracking Study Field

Sampling Plan (FSP), specifically SOP-07 which states, “Post-surgery, the individual fish will be kept in an aerated recovery tank until they exhibit behavior consistent with pre-surgery observations. It is anticipated that the fish will be held for approximately 2 hours, but hold times may be longer or shorter.”

During oversight of fish tagging activities, EPA’s observer noted that tagged fish were released within a period of less than 2 hours. Sections 4.6.2 and 4.6.3 of the Acoustic Fish Tracking Study Field Sampling Plan (FSP) provide a general overview of the approach for the acoustic tag implantation, recovery, and release of tagged fish, including a wide range of post-surgery recovery time of 2 hours to 1 day for evaluating fish health prior to its release back to the river. The specific details of the tagging procedure including post-surgery holding times are described in SOP-07 Surgical Implantation of Acoustic Tags of the Fish Tracking FSP. SOP-07 states “Post-surgery, the individual fish will be kept in an aerated recovery tank until they exhibit behavior consistent with pre-surgery observations. It is anticipated that the fish will be held for approximately 2 hours, but hold times may be longer or shorter.”

In the field this past week, recovery of the tagged fish post-surgery was carefully observed and many fish rapidly exhibited behavior consistent with pre-surgery conditions (under 1 hour). Based on the professional judgment of the fish biologists monitoring fish health, the holding time varied depending on the observed behavior of the recovering fish. Consistent with SOP-07 of the Fish Tracking FSP, some fish were deemed fully recovered and were released in less than 2 hours. In summary, the procedure that was followed for assessing post-surgery holding time of the tagged fish is in accordance with the Fish Tracking FSP.

**Ken Tyrrell**

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